

STUDY OF ORGANIZED MARKETING OF FISH IN EAST SINGHBHUM OF JHARKHAND



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**STUDY OF ORGANIZED MARKETING OF FISH IN
EAST SINGHBHUM OF JHARKHAND**



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REQUIREMENTS FOR THE DEGREE
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Certificate

This is to certify that the thesis entitled, "STUDY OF ORGANIZED MARKETING OF FISH IN EAST SINGHBHUM OF JHARKHAND" submitted in partial fulfillment of the requirements for the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRIBUSINESS** of the Faculty of Post- Graduate Studies, Birsa Agricultural University, Kanke, Ranchi, Jharkhand is faithful record of bonafide project work carried out by **Mr. Adarsh Toppo** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

It is further certified that the assistance and such help received by her during the course of investigation have been duly acknowledge.

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We, the under signed members of the Advisory Committee of **Mr. Adarsh Toppo**, a candidate for the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRIBUSINESS** have gone through the manuscript of the project and agree that the project entitled “**STUDY OF ORGANIZED MARKETING OF FISH IN EAST SINGHBHUM OF JHARKHAND**” may be submitted by **Mr. Adarsh Toppo** in partial fulfillment of the requirements for the Degree.

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**DEDICATED
TO MY MOTHER
AND FAMILY FOR THEIR LOVE,
ENDLESS SUPPORT AND
ENCOURAGEMENT**

.....ADARSH TOPPO

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Place:

Date:/...../ 2021

Adarsh Toppo

ABSTRACT

The study entitled “**The study of organized marketing of fish in East Singhbhum of Jharkhand**” was conducted in the two higher secondary markets in Sakchi and Bistupur of East Singhbhum district with the specific objectives *viz.* to study the organized marketing of fish, to study the consumer behaviour of residents of different blocks of East Singhbhum and to study the strategy of government supporting fish marketing in the district of East Singhbhum. Five wholesalers from each wholesale market and 5 consumers from each 10 blocks of the district were surveyed for the study. The information like the average weekly purchase and sales of fresh and frozen fishes, area of sales, marketing infrastructure available, quantity of fish purchased at a time, frequency of purchase and factors influencing their purchase decision were collected.

The findings revealed that wholesalers of Sakchi and Bistupur fish market imported 77.3% fish from outside the state of the total fish purchased. Andhra Pradesh was the major supplier (88%) of frozen fish and West Bengal was the largest supplier of fresh fishes. The local procurement was only 22.7%. Wholesale fish markets in East Singhbhum district are not organized and lack basic infrastructure like storage and packaging facilities. It was also observed that majority of the consumers (48%) of the East Singhbhum district bought up to 1 kilogram of fish at a time and 38% of the consumers used to buy fish twice a week. Consumers were price sensitive and preferred fresh fish over frozen ones. The Fish Domestic Market Scheme, implemented by the Government of Jharkhand had proved beneficial for the retailers, but did not benefit the wholesalers of the district. The components like the stall, cutting equipments, kiyosk, auto rickshaw and e-rickshaw were distributed among the retailers. Based on the findings, it could be concluded that there is a tremendous scope of local fish production, and with required government support Jharkhand could see blooming blue revolution.

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CHAPTER- I
INTRODUCTION

INTRODUCTION

Fish has been an important part of human diet since early days. Fish is considered one of the healthiest foods on planet. It is packed with many vital nutrients like high quality protein, Iodine and various vitamin D and minerals. It contains omega-3 fatty acids which are crucial for optimum body growth and brain functioning.

Fishery is an important sector in India which play an important role in the economic development, contribute to food and nutritional security, national income, employment opportunities and generating livelihood options of the country (Kumar and Shivani 2014). India ranks second in area of fisheries and third in fish production, contributing 1.07% to the national GDP and 6.3% to the total global fish production (Anonymous 2020). India is blessed with an abundance of fisheries resources both inland and marine. The country has a long coastline of 8118 km and inland fisheries resources include 1.96 km stretch of rivers and canals, 3.15 million ha of reservoirs, 2.44 million ha of ponds and tanks, 0.798 million ha of beels, derelict water bodies, 1.24 million ha of brackish water areas and 0.29 million ha of estuaries (Datta, 2011 and anonymous, 2020).

Jharkhand is a land locked state having a sizeable number of medium and large reservoirs as well as substantial amount of ponds and tanks of different sizes. But the resources are untapped and depend on import from Andhra Pradesh, West Bengal and Odisha to meet its annual fish demand. The annual demand in the state was 2.3 lakh m. tons while the supply was 2.23 lakh tons in the year 2019-20; an area of 2.19 lakh ha of land is under fish cultivation in Jharkhand (Annual handbook published by Directorate of Fisheries, Ranchi).

Marketing of fish involves all the activities in the flow of fish or fish products from the farmer to consumer. The target of marketing is usually to close the gap between the areas of fish scarcity and abundance with profit that include assemblage, storage, sorting, grading, packaging, labeling, storage and transportation. These operations are carried out by marketing agents like producers, fishermen cooperatives societies, wholesalers, retailers, vendors and consumers who are the key players in the marketing channels. Being perishable in nature, an efficient marketing system of fish aims to provide fish to consumers at the right time and in the right place. Fish is marketed through various marketing channels. The primary channel includes the farmers directly

selling fishes to the consumers in village markets. Secondary marketing channels involve a middle man between farmer and consumer who buys fish from farmers and sell them in secondary markets located in towns. In higher secondary markets, the middleman sells the fish to the whole sellers in the higher secondary markets. Higher secondary markets have connection with secondary markets. City or terminal markets involve vendors who buy fish from higher secondary markets and sell them in cities.

In India, all major coastal states like Tamil Nadu, Kerala, Karnataka, Maharashtra, Andhra Pradesh, Odisha and West Bengal have big markets for fish. But physical facilities and infrastructure in all types of fish markets are far from satisfactory (FAO, 2001). Some of the problems in fish marketing include high perishability and bulkiness of material, high heterogeneity in size and weight among species, high cost of storage and transportation, no guarantee of quality and quantity of commodity, low demand elasticity and high price spread (Ravindranath, 2008). An efficient fish marketing system could eliminate some of the depressed pockets of malnutrition by supplying fish at reasonable prices to people living on subsistence level. Hygienic conditions of market place, ice facility, infrastructure, adequate storage and good transport facilities are required in these markets (Hossain *et al*, 2015).

Though the domestic fish markets hold a huge potential, it is highly unorganized and unregulated in India. The improvement in fish marketing system and distribution would not only reduce demand supply gap across the country, but also contribute to food and nutritional security of a vast majority of resurgent middle income population (Kumar *et al*, 2008).

The major fish markets in Jharkhand are in Ranchi, Jamshedpur, Dhanbad, Deoghar and Koderma which supply fish to their nearby areas. In Ranchi, the hygienic fish market is operational which has the facility for storage, drainage, transport etc. Apart from Ranchi, the infrastructure facilities in other fish markets are not satisfactory and need improvement in the physical conditions. In East Singhbhum there are 2 major fish markets in Sakchi (Jamshedpur) and Bistupur (Jamshedpur). These two markets have been supplying fish to the entire district as well as neighboring districts like West Singhbhum and Sareikela-Kharsawan.

Indian major Carps (IMC) are the most sold fish breeds in these markets which include Rohu, Catla and Mrigal. Rohu is the highly demanded fish breed among them. Apart from them, Pangasius, Common Carp, Grass carp, Shrimps, Telapia and Promfret are also sold in these markets. According to Department of Fisheries, Jharkhand, Rohu,

Catla and Mrigal are supplied by the local fisherman and Pangasius is majorly cultivated in Chandil Dam and supplied all across the state and even transported to the other states. In East Singhbhum, Freshwater fishes are supplied from Dimna dam, Chandil dam and Burudih dam. Apart from these, local water bodies are also used for fish production. But for other varieties, the dealers have to depend on the imports from Andhra Pradesh in frozen form.

Frozen form has lower prices than the Fresh fishes. The consumers prefer Fresh fishes over the frozen fishes due to health reasons. But the frozen fishes are demanded in bulk by the restraurants and functions. In the retail market, both types i.e. Fresh and frozen have almost same demand. During the pandemic, the sales of fish is expected to increase because firstly people while staying in home increase in their expenditure on food items and secondly fish is one of the best source of protein available in market.

National Fisheries Development Board has implemented schemes for the development of domestic fish marketing in India. This programme includes modernization of wholesale fish market (Rs.250 lakhs/ 50 stalls), development/ construction of new Retail Fish Market Complexes with outlets (Rs.50 to 100 lakhs to established retail market and up to Rs.50 lakhs for minor retail markets), setting up of Fish Retail Outlets (up to Rs.10 lakhs), retailing by fisherwomen (up to Rs.10 lakh), cold chain development and processing of Value Added Fish Products, Model Fish Dressing centre (up to Rs.150 lakhs), Setting up of Solar Fish Drying Units, Platform for Sun Drying of Fish, Campaign for promotion of fish and fish products consumption and training and demonstration to fisherwomen on hygienic handling of fish and processing/ value addition.

In Jharkhand, the same programme was implemented as Fish Domestic Market Scheme in 2015. Under this scheme, stalls for processing & selling of fishes in hygienic condition, stall for retailers, cutting tools for retailers, auto-rickshaw, e-rickshaw and pickup vans were distributed among retailers in various districts. The components of distribution varied every year according to the Detailed Project Report prepared by the Directorate of Fisheries, Jharkhand.

With this available information, the study was taken with a view to strengthen the fish industry with the following objectives: -

1. To study the organized marketing of fish in East Singhbhum
2. To study the consumer behaviour of the residents of the different blocks of East Singhbhum.

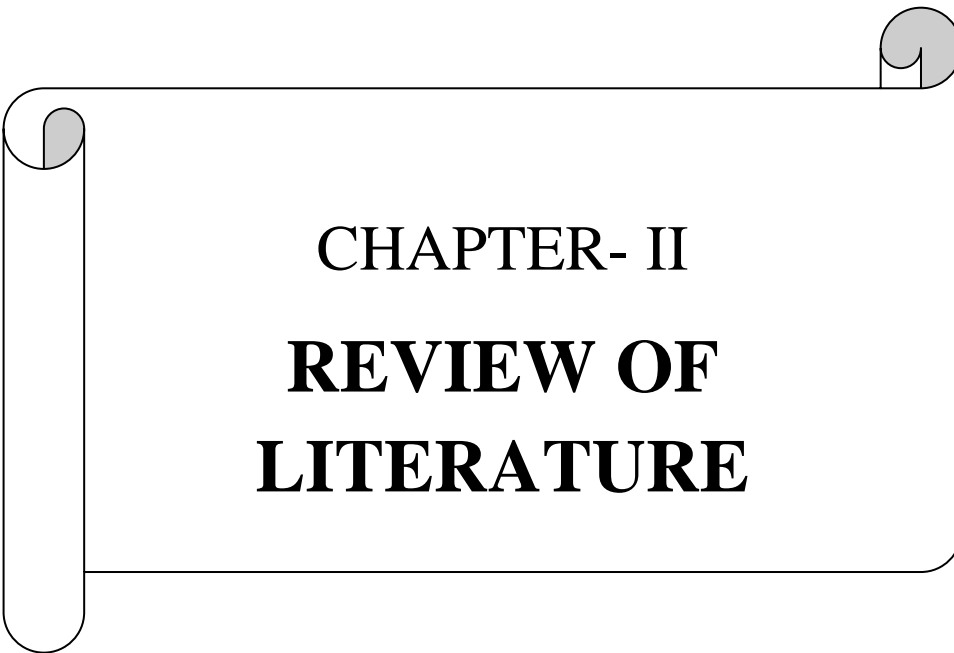
3. To study the strategy of government supporting fish marketing in East Singhbhum.

Limitations of Study:

The study was conducted during the lockdown. Public transport was unavailable and respondents were initially hesitant to interact. In the wholesale market, almost every day of the week was very crowded making it very difficult to interact with the wholesalers. Consumers were hesitant while sharing their personal information.

Layout of dissertation

The first chapter introduction includes the introduction of fish, fisheries in India and Jharkhand, the present market condition of fish markets in India and government schemes supporting marketing of fish. The second chapter review of literature contains the review of literature which is relevant to the present study. The third chapter research methodology includes the research methodology adopted for conducting the study. It includes the locale of study, the sample size, sources of data and the methods of data interpretation. The fourth chapter results and discussion contains the results and discussion of the findings in form of tables and figures and their interpretation. The fifth chapter summary and conclusion contains the summary of the study and the conclusion along with the suggestions. Bibliography and used schedule have been appended at the end.



CHAPTER- II
REVIEW OF
LITERATURE

REVIEW OF LITERATURE

Review of literature presents the salient finding of previous studies in light of objectives of the study. This part includes the reviews of research studies (published, unpublished thesis, views news etc.) related to the organized marketing of fish and consumer behaviour regarding fish consumption.

2.1. Organized marketing of fish

Teklu and Johnson (1987) estimated two different demand systems using two different functional models applied to the same cross-section survey. The two income elasticities arrived for fish were 0.81 and 1.04, respectively. The authors also made a comparison with other studies carried out in the Asian region and noted that different data bases, reference periods, definition and aggregation of commodities, demand structure and methods of estimation tended to give different results and therefore comparisons must be interpreted carefully.

Chand and Das (2002) have given an account of basic requirements for an organized Fish Market. They have specified the essential infrastructure facilities needed for an organized market. It has been suggested that to make the entire fish marketing system successful, apart from having an organized fish market, right marketing strategies are essential. For this, identification of consumers' needs and nature of demand for products and services is necessary.

Kumar et al. (2008) in their study on the domestic fish market in India concluded that though the domestic fish markets hold a huge potential, it is highly unorganized and unregulated in India. The improvement in fish marketing system and distribution would not only reduce demand supply gap across the country, but also contribute to food and nutritional security of a vast majority of resurgent middle income population.

Hossain et al. (2015) in their study of marketing of fishery products in Dinajpur (Bangladesh) and livelihood of fish retailers concluded that price of fish depends on the market structure species, freshness, demand and supply wholesalers are not size if fishes. They also found that hygienic conditions of market place, infrastructure, ice facilities, proper storage and good transport facilities are essential for fish markets.

Ngasotter et al. (2020) conducted a study on the present status of fisheries in Odisha, constraints and challenges faced by the farmers and fishers, and prospects and strategies for further improvement and development in the state. They concluded that more emphasis is required to reach its full potential. To further increase fish production, the various underutilized water bodies need to be explored and utilized sustainably. Understanding the socio-economic problems of the farmers, promotion and adoption of a robust and modern aquaculture system, upgraded infrastructure facilities and improved management policies are required for sustainable development of aquaculture in the state.

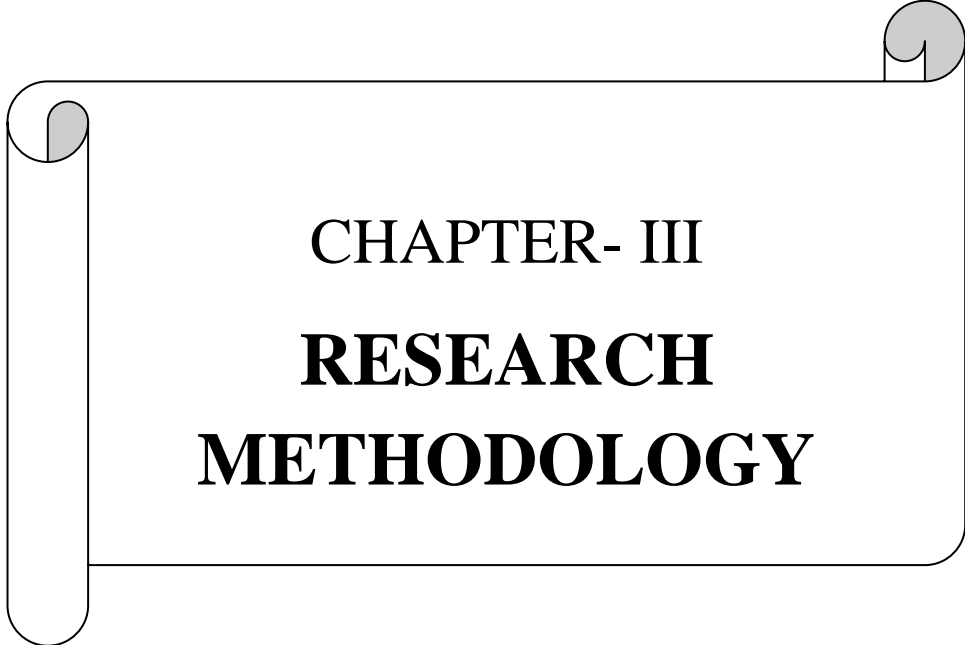
2.2. Consumer behaviour

Basuki and Uluw (1998) made a survey on fish consumption patterns in selected major cities of Java. The fish consumption in Java seems to be influenced by fondness and preferences, as well as by the products availability. The results of a survey in four major 15 cities show that processed marine fish products are consumed by the majority of people. In Surabaya and Bandung fresh fish and salted boiled fish became favorite foods, while in Semarang pressure-cooked fish and salted fish became the most favorite ones. In Yogyakarta, almost all respondents prefer to consume fresh, salted and salted boiled fish. Generally, the consumer complained about the quality of products, especially for salted and salted boiled fish. More than 60 per cent of respondents in Surabaya did not satisfy with salted and salted boiled fish qualities. In Semarang, consumer dissatisfaction reached more than 20 percent for salted fish and more than 50 per cent for salted boiled fish. In Bandung, fermented fish and salted fish were admitted as low quality products. Regarding the consumer budget, the more they earned the more fish they consumed. Compared with the total expenses, the fish consumption reached 10 to 14 per cent. Finally, the improvement of the quality and the products diversification apparently would increase the demand.

Mazrooei et al. (2003) conducted a study in order to provide information on Oman consumers' attitudes and preferences for fish purchase form and market outlets using an information processing model, it identifies factors for predicting changes in market demand for fish products and services as a result of changes in consumers attributes. Results indicate that on-shore fish markets are the most preferred outlets for the coastal population while retailers and Oman National Fisheries Company are the commonly used outlets. Results also show that whole fish is the most preferred form of

purchase for both rural and urban-medium to low income consumers while a large proportion of high income consumers in urban regions prefer mainly sliced fish. It has been suggested that market development efforts should focus on the organization of on-shore fish markets in coastal regions and retailers and Oman Fisheries Company's outlets in the island areas. Further it was suggested that forms other than whole fish may be promoted for sale in super markets and specialized shops for the urban high income consumers group.

Baya (2013) and Kareemun (2013) carried out fish surveys at selected locations in Mauritius (BSc thesis). The official fish consumption level in Mauritius was 21.7 kg/year in 2010 and 21.0 kg/year in 2011. However, based on calculations from this survey, it was found that fish consumption among the sample of respondents is 40.0 kg/capita/year (excluding vegetarians and non-consumers). This is a more realistic figure although the survey targeted likely fish consumers rather than the general public at large. Further studies are recommended in order to gain more information about issues not covered in the present survey.



CHAPTER- III
RESEARCH
METHODOLOGY

RESEARCH METHODOLOGY

Research methodology is the specific procedures or technique used to identify, select, process and analyze information about the study. This section allows the reader to critically evaluate a study's overall validity and reliability. The choice of research method depends upon the researcher and the resources available. The research methodology used in the present study has been discussed under following sub-headings:

- 3.1 Locale of study
- 3.2 Sampling
- 3.3 Data collection
- 3.4 Data analysis and interpretation

3.1 Locale of study:-

Bistupur and Sakchi wholesale fish markets were selected for the study. Ten blocks of East Singhbhum viz. Jugsalai, Ghatsila, Musabani, Potka, Patatmda, Dumaria, Dhalbhumgarh, Chakulia, Baharagoda and Gurbandha were also selected for the study of consumer behaviour.

3.2 Sampling :-

Five Wholesalers each from Sakchi and Bistupur were randomly selected for the survey. Five consumers from each of the 10 blocks were also selected for the study.

3.3 Data collection:-

3.3.1 Primary data:

Primary data were collected using semi-structured schedule from whole sellers and residents of the selected area. The information collected from dealers are following:-

- ❖ Weekly and monthly sale of various varieties of fish
- ❖ The type of fish they sell, frozen or fresh.
- ❖ The source and quantity of Fresh and frozen fishes.
- ❖ The facilities of storage and transportation of fishes.

The information collected from the residents are as follows:-

- ❖ The frequency and quantity of purchase of fish weekly and monthly.
- ❖ The type of fish they prefer, Fresh or frozen.

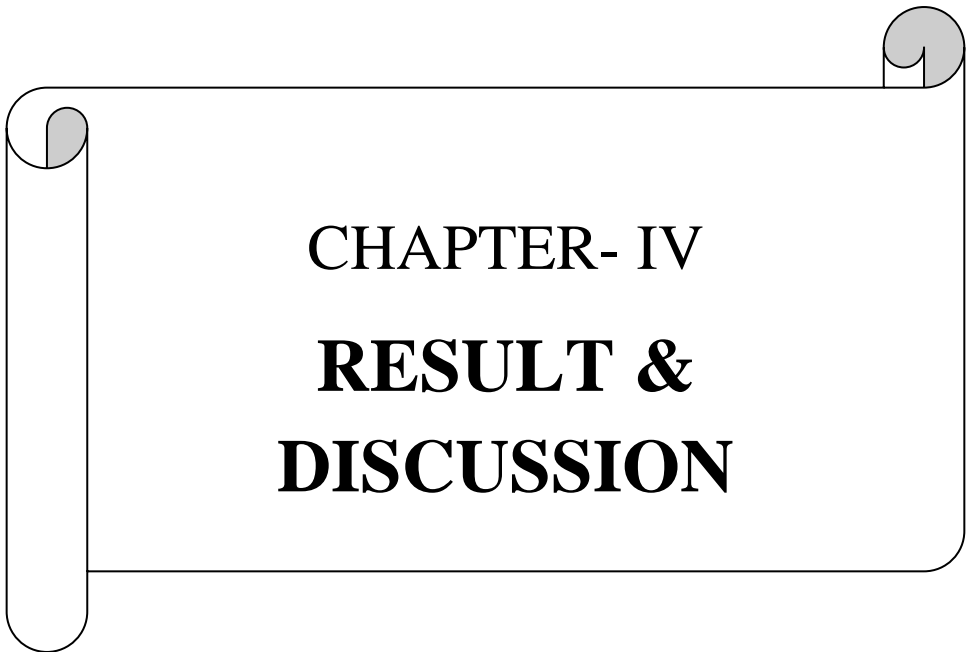
- ❖ The factors affecting their choices.
- ❖ Their perspective of fish as a part of their diet.

3.3.2 Secondary data: Secondary data were collected from:-

- ❖ Books
- ❖ Newspapers
- ❖ Reports
- ❖ Internet
- ❖ Journals, etc.

3.4 Data analysis and interpretation:-

The collected data were analyzed in a systematic manner and interpreted with simple method. Collected data were analyzed and interpreted in light of objectives using mean, frequency, percentage and other relevant statistical tools.



CHAPTER- IV
RESULT &
DISCUSSION

RESULTS AND DISCUSSION

The present study was undertaken to have a comprehensive view of the study area, sources and sales of different species of fish, consumer behaviour, preferences and the government schemes which support the marketing of fish in East Singhbhum of Jharkhand. Data collected from the survey is presented in tables and illustrated graphically in figures along with appropriate interpretation using simple statistical techniques. The results are arranged as per the pre-defined objectives which are presented in the following sections:

- 4.1. Marketing of fish
- 4.2. Consumer behaviour
- 4.3. Government supporting fish marketing in East Singhbhum

4.1. Marketing of fish

Marketing of fish involves all the activities in the flow of fish or fish products from the farmer to consumer. The target of marketing is usually to close the gap between the areas of fish scarcity and abundance with profit that include assemblage, storage, sorting, grading, packaging, labeling, storage and transportation. These operations are carried out by marketing agents like producers, fishermen cooperatives societies, wholesalers, retailers, vendors and consumers who are the key players in the marketing channels. For marketing of fish, 3 main channels are used *viz* primary channel (producer and consumer), secondary channel (producer, retailer and consumer) and higher secondary channel (producer, wholesaler, retailer, vendor and consumer). The findings of the study regarding the marketing of fish are presented in following sections:

- 4.1.1. Number of wholesalers and retailers
- 4.1.2. Sources and average weekly arrival of frozen fish
- 4.1.3. Sources and average weekly arrival of fresh fish
- 4.1.4. Average weekly sales
- 4.1.5. Location-wise number of retailers
- 4.1.6. Available marketing infrastructure

4.1.1 Number wholesalers and retailers

Table 4.1.1 and Figure 4.1.1 presents the number of wholesalers and retailers present in the wholesale fish markets of Bistupur and Sakchi and

Table-4.1.1: Number of wholesalers and retailers in selected markets

Sl. No.	Name of market	Number of wholesalers	Number of retailers
1	Sakchi	32	219
2	Bistupur	24	120

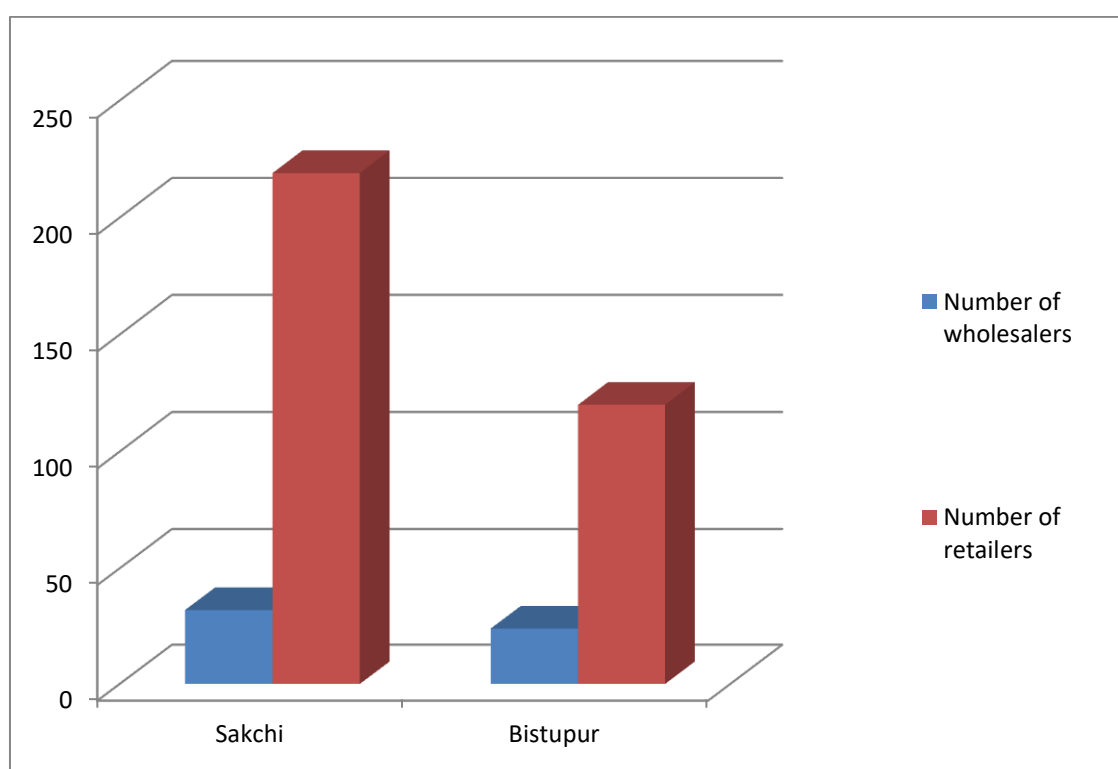


Figure 4.1.1 Number of wholesalers and retailers in selected markets

It was found that there were 32 wholesalers in Sakchi fish market under who supplied fishes to 219 retailers. In Bistupur fish market, there were 24 wholesalers who supplied fish to 120 retailers. After further enquiry, it was found that there were more retailers and vendors who bought fish from the retailers.

4.1.2 Sources and average weekly arrival of frozen fish

The average weekly purchase of different species of frozen fish along with the source is represented in Table 4.1.2.

Table-4.1.2: Sources and weekly arrival of frozen fish

		Source and average weekly arrival(in q)		
Sl. No.	Fish Species	Andhra Pradesh	West Bengal	Odisha
1	Rohu	3.5	0.44	0.13
2	Catla	1.8	0	0
3	Mrigal	0.7	0	0
4	Common Carp	0.5	0	0
5	Grass Carp	0.6	0	0
6	Tilapia	0.7	0	0
7	Shrimp	1.2	0.3	0.5
8	Pangasius	0	0	0
9	Others	1.1	0	0

The findings revealed that on an average, frozen rohu was the highest imported fish breed with a weekly import of 3.5q from Andhra Pradesh, 0.44q from West Bengal and 0.13q from Odisha, followed by shrimps with an average import of 1.1q, 0.3q, 0.5q from Andhra Pradesh, West Bengal and Odisha respectively. It was followed by catla (1.8q), Mrigal (0.7q), Tilapia (0.7q), Common Carp (0.6q) and Grass Carp (0.5q) from Andhra Pradesh.

The table gives an indication that Jharkhand is deficient in fish production and, therefore, a proper strategy should be developed to promote local production.

4.1.3 Sources and weekly arrival of fresh fish

The average weekly purchase of different species of fresh fish along with the source is presented in Table 4.1.3.

Table-4.1.3: Sources and weekly arrival of fresh fish

Sl. No.	Fish Species	Source and average quantity(in q) weekly		
		Local	West Bengal	Odisha
1	Rohu	2	3.1	0.9
2	Catla	1	1.5	0
3	Mrigal	0	0.3	0
4	Common Carp	0.2	0.4	0
5	Grass Carp	0.15	0.2	0
6	Pangasius	1.9	0	0

On an average, 2q, 3.1q and 0.9q fresh rohu was procured weekly from local sources, West Bengal and Odisha respectively. 1q and 1.5 q fresh catla was weekly purchased from local sources and West Bengal respectively. 1.9q Pangasius was procured from local source i.e. Chandil Dam weekly. Among other fresh breeds, 0.2q and 0.4q Grass carp was purchased from local sources and West Bengal respectively.

It is revealed by the table that the consumers of Jharkhand have a preference for fresh fish with a bias towards Rohu.

4.1.4 Average weekly Sales

Average weekly sales of frozen and fresh species of fish from the wholesale markets of Bistupur and Sakchi are presented in Table 4.1.4 and Figure 4.1.2.

Table-4.1.4: Average weekly sales from Bistupur and Sakchi wholesale markets

Breeds	Average weekly sales (in quintal)					
	Fresh			Frozen		
	Average	Highest	Lowest	Average	Highest	Lowest
Rohu	6	8	4.5	4.7	6	2.5
Catla	2.5	4.1	1.3	1.8	2.6	1.1
Mrigal	0.3	1	0.1	0.7	1.3	0.5
Common Carp	0.6	1.1	0.3	0.5	1	0.3
Grass Carp	0.35	0.65	0.3	0.6	1	0.25
Tilapia	0	0	0	0.7	1.3	0.2
Shrimp	0	0	0	2.0	3.2	1.3
Pangasius	1.9	2.4	1.5	0	0	0
Others	0	0	0	1.1	1.5	0.8

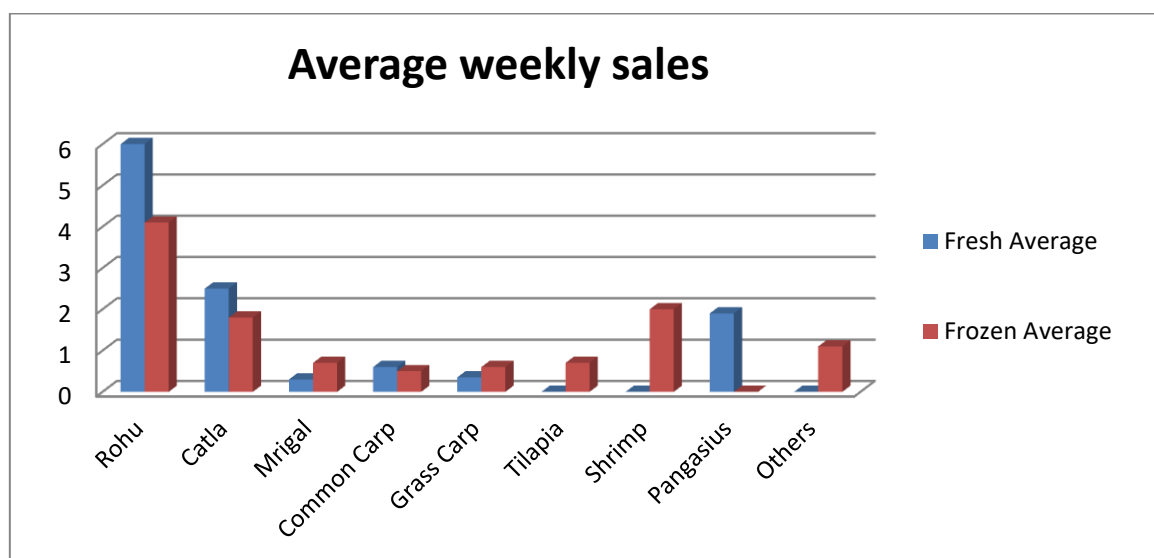


Figure 4.1.2 Average weekly sales from Bistupur and Sakchi wholesale markets

The findings showed that the average weekly sales of Rohu was highest with 6 quintal fresh, 4.1 quintal frozen followed by Catla (2.5q fresh, 1.8q frozen), Shrimp (2.0q frozen), Pangasius (1.9q fresh), Mrigal (0.3q fresh, 0.7q frozen), Telapia (0.3q fresh, 0.73q frozen), Common Carp (0.6q fresh, .05q frozen) and Grass carp (0.35q fresh, 0.6q frozen) and 1.1q frozen other breeds of fish.

4.1.5 Location-wise number of retailers

The wholesalers of Bistupur and Sakchi market reported that they supplied fish to 11 blocks of East Singhbhum and nearby districts viz. Saraikela-Kharsawan and West Singhbhum districts. The location-wise number of retailers is presented in Table 4.1.5 and Figure 4.1.3.

Table-4.1.5: Location-wise number of retailers

Sl. No.	Location	No. of retailers
1	Jugsalai	68
2	Ghatsila	54
3	Musabani	28
4	Potka	21
5	Boram	19
6	Patamda	21
7	Dumaria	16
8	Dhalbhumgarh	13
9	Chakulia	18
10	Baharagoda	14
11	Gurbandha	9
12	Sareikela-Kharsawan	24
13	West Singhbhum	34



Figure 4.1.3 Location-wise number of retailers

It was found that the interviewed wholesalers distributed fish to 11 blocks of East Singhbhum along with Saraikela-Kharsawan and West Singhbhum districts. The highest number of retailers was in Jugsalai block (Sakchi, Bistupur, Birsa Nagar) i.e. 68, followed by Ghatsila (54 retailers), West Singhbhum (34 retailers), Musabani (28 retailers), Saraikela-Kharsawan (24 retailers). The least number of retailers were in Gurbandha i.e. 9 retailers.

4.1.6 Available marketing Infrastructure

Fish is perishable product which requires full-proof packaging for transportation and delivery to ultimate consumer. The available infrastructure facilities in Bistupur and Sakchi market are presented in Table 4.1.6.

Table-4.1.6: Available marketing infrastructure

Sl. No.	Infrastructure	Sakchi	Bistupur
1	Shed	Y	Y
2	Storage	N	N
3	Packaging	N	N
4	Transportation	Y	Y

The perusal of findings revealed that shed and transportation facilities were present in both the fish markets of Sakchi and Bistupur. But the facilities like cold storage and packaging were absent in both the markets.

4.2 Consumer behaviour

Consumer behaviour is the study of how individual consumer or a group of individuals select, buy and use ideas, goods and services to satisfy their needs and wants. It refers to the action of consumers in the market place and the motives behind those actions. In the present study, consumer behaviour will be discussed under following sections:

- 4.2.1 Age of consumers
- 4.2.2 Family type
- 4.2.3 Education details
- 4.2.4 Occupation of the consumers
- 4.2.5 Quantity of purchased at a time
- 4.2.6 Frequency of purchase

- 4.2.7 Preferred type of fish
- 4.2.8 Factors affecting the purchase
- 4.2.9 4 C's of marketing

4.2.1 Age of consumers

The age of buyers were divided into young (below 26 years), Middle (26 to 46 years) and old (above 46 years) and is presented in Table 4.2.1 and Figure 4.2.1.

Table-4.2.1: Age of consumers

Sl. No.	Age	No. of Respondents	Percentage
1	Young (Below 26 yrs.)	7	14
2	Middle (26 to 46 yrs.)	36	72
3	Old (Above 46 yrs.)	7	14

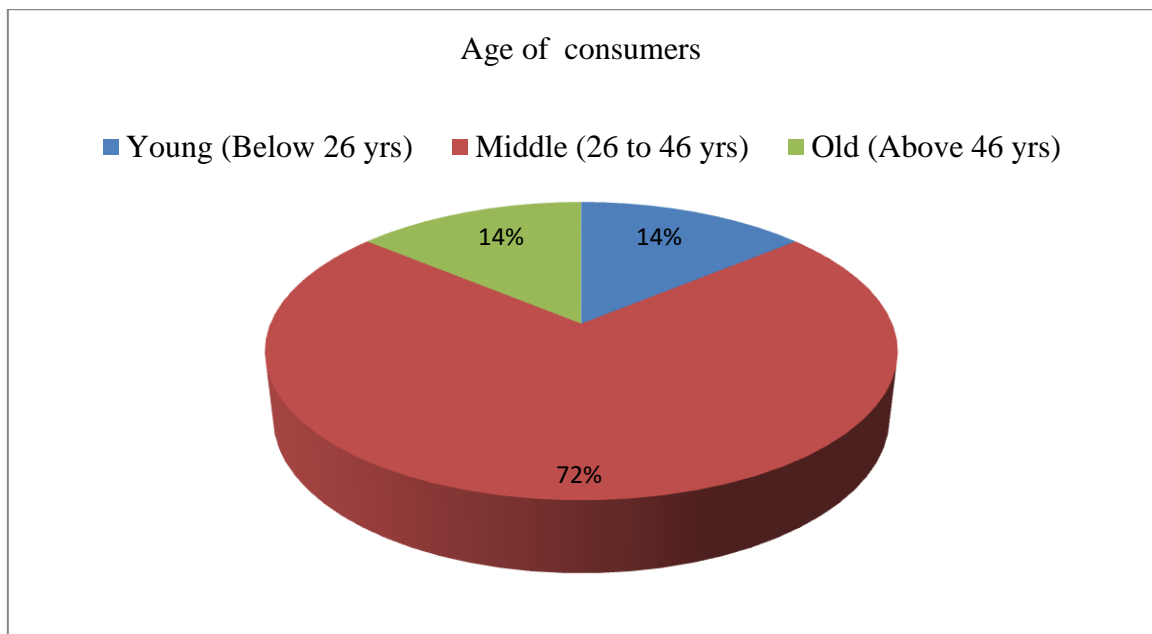


Figure 4.2.1 Age of consumers

It was found that 72% of respondents were of the age group 26-46 years and 14% each in the age group below 26 years and above 46 years.

4.2.2 Family type

Table 4.2.2 and Figure 4.2.2 present the details of the type of families of all 50 consumers categorized into nuclear and joint families.

Table-4.2.2: Family type of consumers

Sl. No.	Type of Family	No. of Respondents	Percentage
1	Nuclear	21	42
2	Joint	29	58

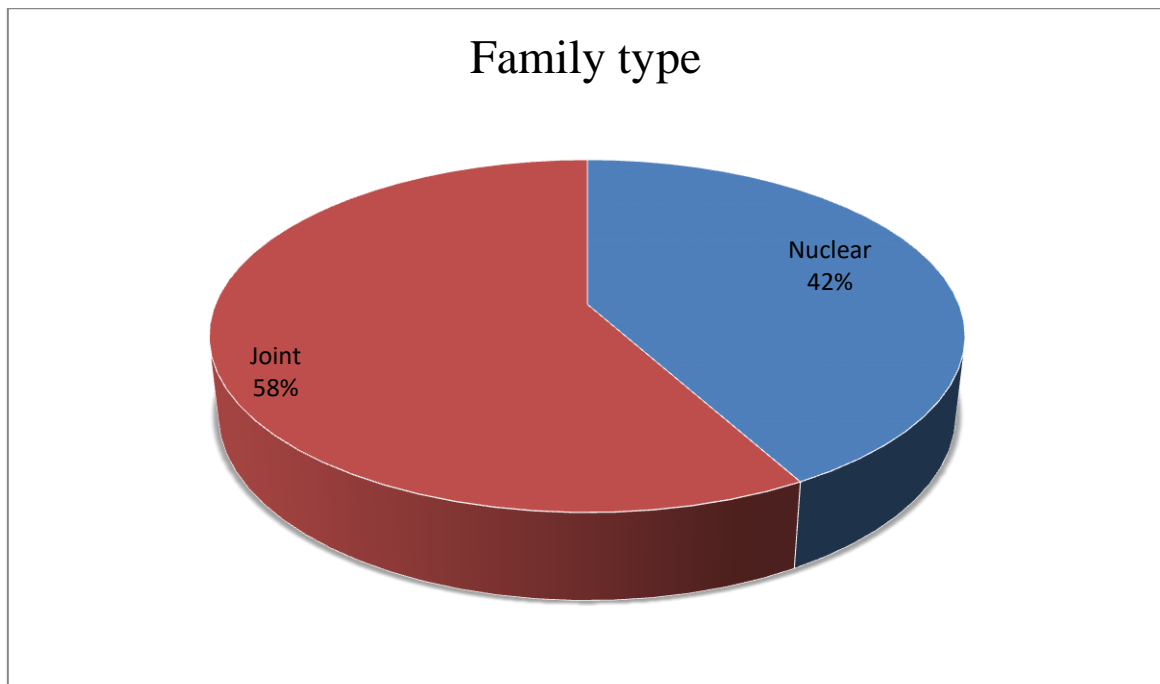


Figure 4.2.2 Family details of consumers

The findings revealed that 58% of the respondents have joint family while the rest 42 % live in a nuclear family.

4.2.3 Education details

The education of the respondents was categorized into illiterate, middle school, matriculation, intermediate, graduation and masters. The education details are presented in Table 4.2.3 and Figure 4.2.3.

Table-4.2.3: Education details of consumers

Sl. No.	Education	No. of Respondents	Percentage
1	Illiterate	3	6
2	Middle school	2	4
3	Matriculation	4	8
4	Intermediate	19	38
5	Graduation	20	40
6	Masters	2	4

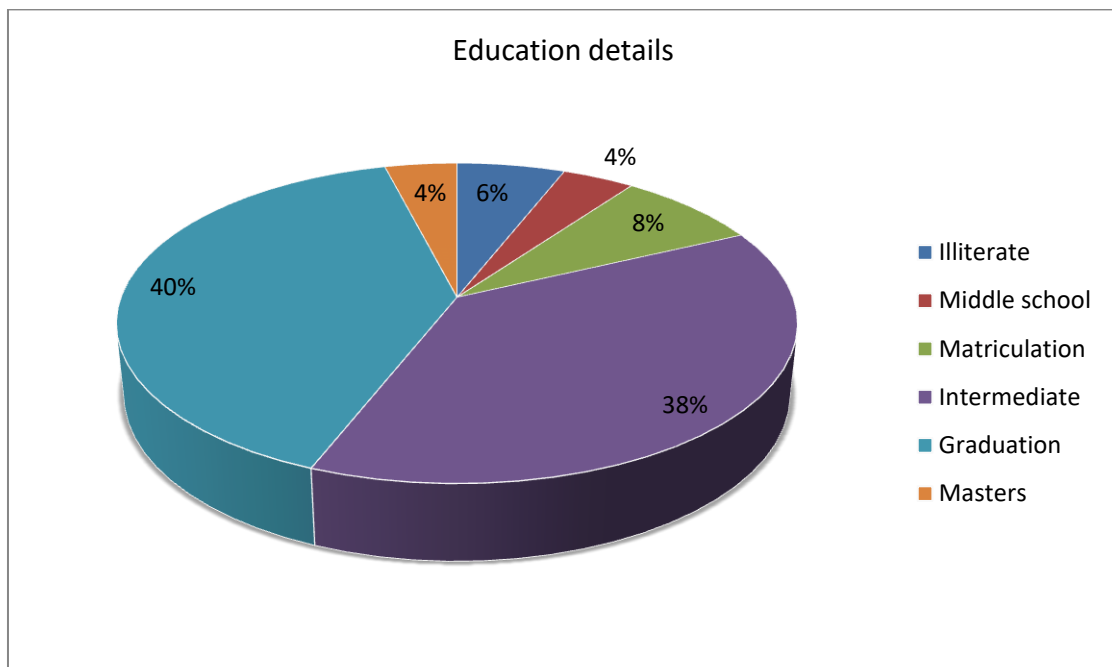


Figure 4.2.3 Education details of consumers

The findings revealed that 40% of consumers had completed graduation followed by 38% consumers who completed Intermediate. The percentage of consumers possessing education up to matriculation, illiterate, middle school, masters were 8%, 6%, 4% and 4% respectively.

4.2.4 Occupation of the consumers

Table 4.2.4 and Figure 4.2.4 present the type of occupation the consumers were involved in.

Table-4.2.4: Occupation of the consumers

Sl. No.	Occupation	No. of Respondents	Percentage
1	Farmer	6	12
2	Business	3	6
3	Government Employee	27	54
4	Service	14	28

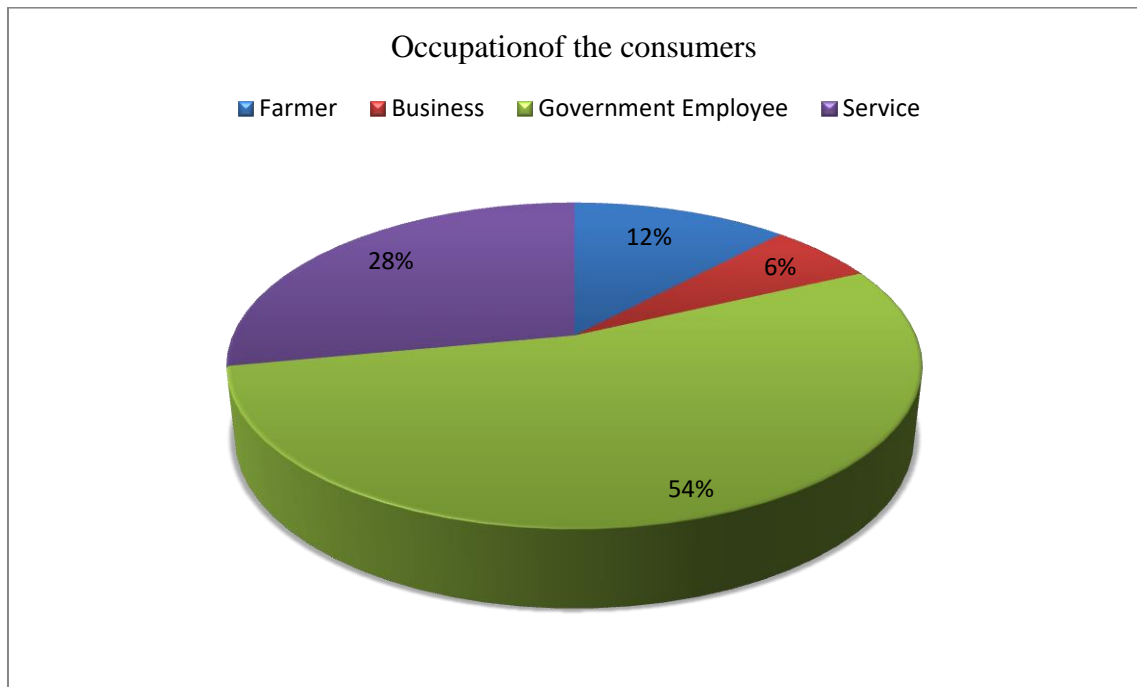


Figure 4.2.4 Occupation details of the consumers

The findings revealed that 54% of the respondents were government employees, 28% of them were from service sector, 12% of them were from agriculture sector and the rest 6% had business as their occupation.

4.2.5 Quantity of purchase at a time

Table 4.2.5 and Figure 4.2.5 show the quantity of purchase that the consumers make at a time from wholesalers or retailers or vendors.

Table-4.2.5: Quantity purchased at a time

Sl. No.	Quantity purchased in one time	No. of respondents	Percentage
1	Up to 1 kg	24	48
2	1 to 2 kg	20	40
3	2 to 4 kg	6	12



Figure 4.2.5 Quantity purchased at a time

It was found that 48% of respondents purchased up to 1 kg fish at a time, 40% of them purchased 1 to 2 kg of fish at once and the rest 12% purchased more than 2kg at once. The findings indicate that the consumer did not purchase higher quantity at once because of the perishable nature of fish.

4.2.6 Frequency of purchase

Table 4.2.6 presents the frequency of purchase of fish that consumers made and the data is categorized into thrice a week, twice a week, once a week and not regular.

Table-4.2.6: Frequency of purchase

Sl. No.	Frequency of purchase	No. of respondents	Percentage
1	3 times a week	6	12
2	2 times a week	19	38
3	Once a week	15	30
4	Daily	1	2
5	Not Regular	9	18

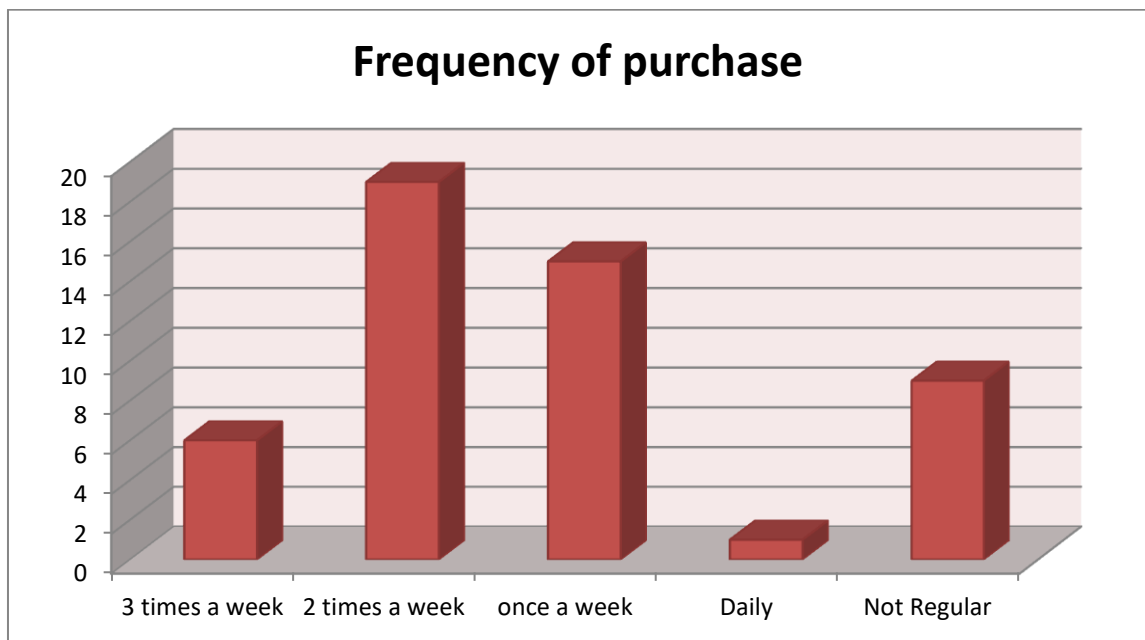


Figure 4.2.6 Frequency of purchase

The findings revealed that, among 50 respondents, 19 of them used to purchase fish two times a week, 15 of them bought fish once a week, 9 of them did not buy fish on a regular basis, 6 of them used to buy fish three times a week and only 1 respondents bought fish daily.

4.2.7 Preferred type of fish

Freshly caught fish are those fresh fishes which are not cultivated for business purpose and are caught from rivers and public ponds and lakes. Cultivated fish are those fresh fishes which are cultivated for business purpose in private ponds or water bodies taken on lease. Table 4.2.7 and Figure 4.2.7 indicate the consumer preferences for cultivated, freshly caught and frozen fish.

Table-4.2.7: Preferred type of fish

Sl. No.	Preferred type of Fish	No. of respondents	Percentage
1	Cultivated	21	42
2	Freshly caught	15	30
3	Frozen	14	28

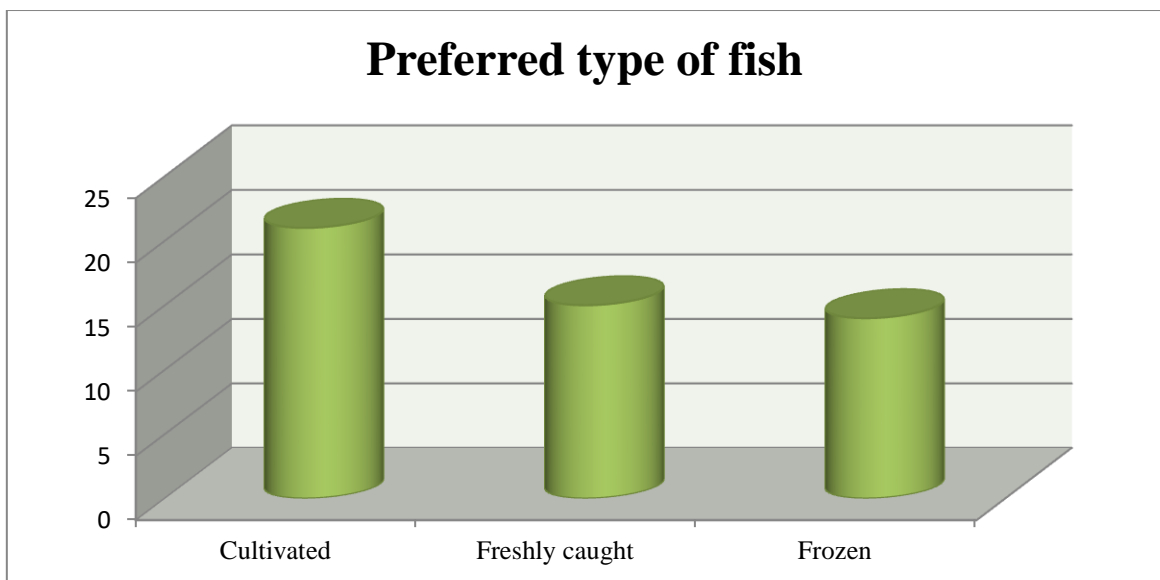


Figure 4.2.7 Preferred type of fish

It was found that 72% respondents who preferred to consume fresh fishes and only 28% of the respondents preferred frozen fish. The majority of consumer preferred fresh fish over the frozen type because of the taste and nutritional value.

4.2.8 Factors affecting the purchase

Table 4.2.8 and Figure 4.2.8 show the major factors which affect the purchasing behaviour of consumers. The three main factors are price, quality and accessibility.

Table-4.2.8: Factors affecting the purchase of consumer

Sl. No.	Factors affecting the purchase	No. of respondents	Percentage (in %)
1	Price	27	54
2	Quality	12	24
3	Accessibility	11	22



Figure 4.2.8 Factors affecting the purchase of consumer

It was found that for 27 respondents price was the major reason affecting the purchase of fish from a wholesaler or retailer or door to door vendor. Twelve respondents had the opinion that quality is the major factor while only 11 respondents considered accessibility the major factor for purchasing.

4.2.9 4C's of marketing

The 4C's of marketing, consisting of consumer wants and needs, cost, convenience and communication, are more valuable to the marketing mix than the 4 P's. They focus not only on the marketing and selling of a product but also communication with the target audience. The 4 C's are more concerned with the consumer and hence are more affective for marketing of a product.

- a) **Consumer wants and needs:** - The first C in marketing mix is the consumer wants and needs. It focuses on filling a void in consumer's life. This marketing strategy is important because it helps to develop a better understanding of customer.
- b) **Cost:-** The second C of marketing mix is the cost. It is not only the price of the product, but the overall cost incurred by the consumer to purchase the product, like the transport cost.
- c) **Convenience:-** convenience of customer is another vital element towards understanding the customer. The marketing of product should be designed in such a way that it is convenient for the consumer to purchase a product. This aims to make the product cost effective and simple for consumer to attain the product without having much of a trouble.
- d) **Communication:-** It is the key element for any business. Communication is a consumer oriented approach for the selling of products. Communication requires interaction between the buyer and the seller. This helps the consumers to get the necessary information required for making purchase decisions.

The satisfaction levels of consumers for each of the 4C's are presented in Table 4.2.9 and Figure 4.2.9.

Table-4.2.9: 4 C's of marketing

Sl. No.	Particular	Highly Satisfied	Satisfied	Disappointed	Highly Disappointed
1	Consumer's wants and needs	2	41	6	0
2	Convenience	39	7	4	0
3	Cost	5	21	11	13
4	Communication	6	39	5	0

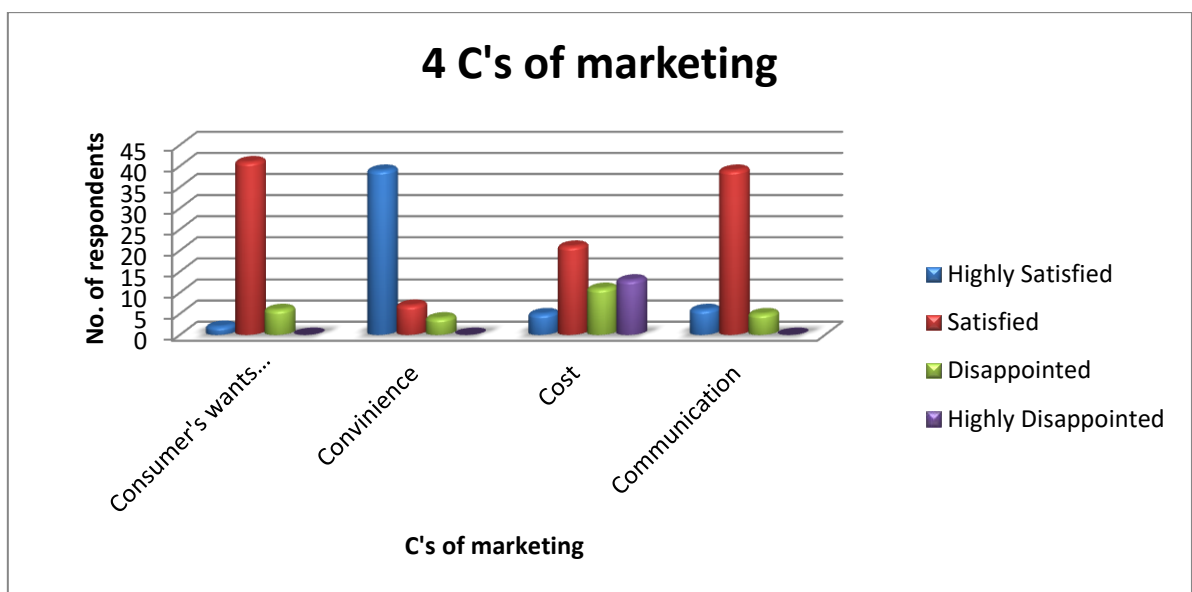


Figure 4.2.9 4C's of marketing

The findings revealed that the satisfaction level of respondents differed widely in case of money cost, where, out of 50 respondents, 21 of them were satisfied with the money cost they pay, while 13 of them were highly disappointed with the money cost they had to incur while purchasing fish. Eighty two percent of the respondents were satisfied with the consumer's wants and needs which fish fulfills. Seventy eight percent respondents were satisfied with the convenience cost they incurred. Seventy eight

percent of respondents were satisfied with the communication cost they had to incur for purchasing fish.

4.3 Government support in marketing of fish in East Singhbhum

Fish Domestic Market Scheme was initiated in Jharkhand in 2015. Under this scheme, stalls for processing & selling of fishes in hygienic condition, stall for retailers, cutting tools for retailers, auto-rickshaw, e-rickshaw and pickup vans were distributed among retailers in various districts. The components of distribution varied every year according to the Detailed Project Report prepared by the Directorate of Fisheries, Jharkhand.

4.3.1 Budget allocation for Fish Domestic Market Scheme from 2017 to 2020:-

Fish Domestic Market Scheme was implemented in Jharkhand in 2015 with a motive to improve domestic fish marketing in the state. Table 4.3.1 presents the budget allocation for the Fish Domestic Market Scheme by the Government of Jharkhand from 2017 to 2020.

Table-4.3.1: Budget allocation of Fish Domestic Market Scheme (2017-2020)

Year	Amount (in lakhs)		% age used
	Allocation	Used	
2017-18	600	196	32.66
2018-19	400	357.26	89.31
2019-20	150	92.64	61.76

The budget allocation decreased every year from 2017 to 2020. In 2018-19, 89.315% of the allocated funds were used which was the highest, followed by 61.76% in 2019-20 and the least was in the year 2017-18 (32.66%). This budget allocated was focused to empower the retailers by providing them with stalls, hygienic stalls, auto rickshaws and e-rickshaws.

4.3.2 Components distribution under Fish Domestic Market Scheme 2016-2020:-

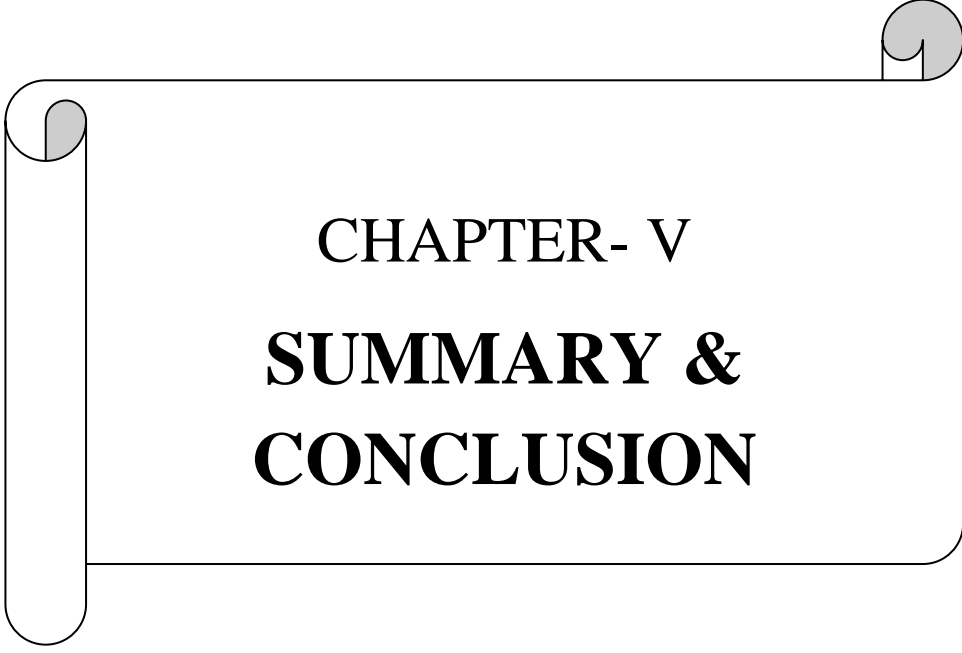
Under this scheme, components like stalls, cutting equipments for retailers, kiyosks for mobile fish selling and vehicles for transportation and retailing like auto-rickshaws and e-rickshaws, were distributed in various districts by the respective district fisheries departments. Table 4.3.2 presents the components distribution under Fish Domestic Market Scheme in East Singhbhum district from 2016 to 2020.

Table-4.3.2: Component distribution under Fish Domestic Market Scheme (2016-2020)

Components	2016-17	2017-18	2018-19	2019-20
Stalls	13	0	3	2
Equipments for retailers	30	0	10	11
Mobile Fish Retailing kiyosk	N/A	0	1	0
Auto rickshaw	N/A	0	2	0
e-rickshaw	N/A	0	2	1

In the year 2015-16, there was no distribution of components in East Singhbhum because the scheme was under planning stage. During 2016-17, 13 stalls and 30 sets of equipments for retailers were distributed in the district. The equipment set contains cutting tools, cutting platform, bucket and umbrella, mobile fish retailing kiyosk, auto rickshaw and e-rickshaw were not included in the components list. In the subsequent year no components were distributed. In 2018-19, 3 stalls, 10 equipment set, 1 kiyosk, 2 auto rickshaws and 2 e-rickshaws were distributed among retailers in the district. In the year 2019-20, 2 stalls, 11 equipment sets and 1 e-rickshaw were distributed to retailers, but no kiyosk and auto rickshaw were distributed.

The findings indicate that the Fish Domestic Marketing Scheme was focused on improving retailing of fish. So the Scheme was designed to benefit retailers. On the other hand, wholesalers did not benefit from this scheme.



CHAPTER- V
SUMMARY &
CONCLUSION

SUMMARY AND CONCLUSION

SUMMARY

Fish has been an important part of human diet since early days. Fish is considered one of the healthiest food on planet. It is packed with many vital nutrients like high quality protein, Iodine and various vitamin D and minerals. It contains omega-3 fatty acids which are crucial for optimum body growth and brain functioning. Fishery is an important sector in India which play an important role in the economic development, contribute to food and nutritional security, national income, employment opportunities and generating livelihood options of the country (Kumar and Shivani 2014). India ranks second in area of fisheries and third in fish production, contributing 1.07% to the national GDP and 6.3% to the total global fish production (Anonymous 2020).

India has a long coastline of 8118 km and inland fisheries resources include 1.96 km stretch of rivers and canals, 3.15 million ha of reservoirs, 2.44 million ha of ponds and tanks, 0.798 million ha of beels, derelict water bodies, 1.24 million ha of brackish water areas and 0.29 million ha of estuaries (Datta, 2011 and anonymous, 2020). Jharkhand is a land lock state having a sizeable number of medium and large reservoirs as well as substantial amount of ponds and tanks of different sizes. But the resources are untapped and depend on import from Andhra Pradesh, West Bengal and Odisha to meet its annual fish demand. The annual demand in the state was 2.3 lakh m. tons while the supply was 2.23 lakh tons in the year 2019-20; an area of 2.19 lakh ha of land is under fish cultivation in Jharkhand (Annual handbook published by Directorate of Fisheries, Ranchi).

In India, all major coastal states like Tamil Nadu, Kerala, Karnataka, Maharashtra, Andhra Pradesh, Odisha and West Bengal have big markets for fish. But physical facilities and infrastructure in all types of fish markets are far from satisfactory (FAO, 2001). Some of the problems in fish marketing include high perishability and bulkiness of material, high heterogeneity in size and weight among species, high cost of storage and transportation, no guarantee of quality and quantity of commodity, low demand elasticity and high price spread (Ravindranath, 2008). An efficient fish marketing system could eliminate some of the depressed pockets of malnutrition by supplying fish at reasonable prices to people living on subsistence level. Hygienic conditions of market

place, ice facility, infrastructure, adequate storage and good transport facilities are required in these markets (Hossain *et al*, 2015).

National Fisheries Development Board has implemented schemes for the development of domestic fish marketing in India which was implemented in Jharkhand in 2015 by the name of Fish Domestic Market Scheme. Under this scheme, stalls for processing & selling of fishes in hygienic condition, stall for retailers, cutting tools for retailers, auto-rickshaw, e-rickshaw and pickup vans were distributed among retailers in various districts. The components of distribution varied every year according to the Detailed Project Report prepared by the Directorate of Fisheries, Jharkhand.

Therefore the study has been planned on the topic “**Study of organized marketing of fish in East Singhbhum**” with specific objectives which are as follows:

1. To study the organized marketing of fish in East Singhbhum
2. To study the consumer behaviour of the residents of different blocks of East Singhbhum.
3. To study the strategy of government supporting fish marketing in East Singhbhum.

Methodology

Research methodology is the specific procedures or technique used to identify, select, process and analyze information about the study. This section allows the reader to critically evaluate a study’s overall validity and reliability. The choice of research method depends upon the researcher and the resources available.

Sakchi and Bistupur Wholesale fish markets were purposively selected for the study. Ten blocks of East Singhbhum namely Jugsalai, Ghatsila, Musabani, Potka, Patatmda, Dumaria, Dhalbhumgarh, Chakulia, Baharagoda and Gurbandha were also selected for the study of consumer behaviour.

Five Wholesalers each from Sakchi and Bistupur were randomly selected for the survey. Five consumers from each of the 10 blocks were also selected for the study.

Salient Findings

1. About 77.3 % of the total fish is purchased from outside the state and only 22.7% fish are procured from local sources. It indicates that Jharkhand is deficient in fish production.

2. About 55% of fresh fishes were imported from outside the state and only 45% of fresh fish were imported from local sources. The consumers of Jharkhand have preference for fresh fish with bias towards Rohu.
3. All frozen fishes were imported from outside the state. Around 88% of frozen fish are supplied by Andhra Pradesh, 6.4% of them were supplied by West Bengal and the rest 5.6% of frozen fishes were procured from Odisha.
4. The wholesale fish markets of Sakchi and Bistupur supplied fish to all blocks of East Singhbhum along with West Singhbhum and Sareikela-Kharsawan. The retailers in such blocks which share boundaries with West Bengal, like Bahragoda, Gurbandha and Chakulia, purchase fish directly from the dealers of West Bengal.
5. Apart from shed and transportation, there are no marketing facilities, such as storage, grading and packaging and available in Sakchi and Bistupur fish markets.
6. The majority consumers (72%) are of age group 26-46 years and majority of consumers (40%) have education up to graduation.
7. Majority of consumers (48%) purchased up to 1 kg of fish at once and 38% of consumers used to buy fish two times a week.
8. The majority of consumers (72%) prefer fresh fish over the frozen type because of the nutritional value and taste.
9. Most of the consumers (54%) considered price to be the major factor influencing their purchase decision. The satisfaction level of consumers regarding the cost differed widely which showed that consumers were price sensitive.
10. There are a variety of government schemes implemented in the state, which are focused on increasing the production of fish. But for marketing of fish, only one scheme i.e. Fish Domestic Market scheme is implemented.
11. The Fish Domestic Market Scheme is focused on the retailers, but no special attention has been given to the wholesalers. The components in this scheme do not include cold storage equipments. The vehicle for the transportation and retailing is included but those vehicles were distributed in very less quantity considering the number of wholesalers and retailers present in the district.

CONCLUSIONS

Based on study it may be concluded that wholesalers of Sakchi and Bistupur fish market imported 77.3% from outside the state of the total fish purchased. Andhra Pradesh was the major supplier (88%) of frozen fishes and West Bengal was the largest supplier of fresh fishes. The local procurement was only 22.7%. Wholesale fish markets in East Singhbhum district are not organized and lack basic infrastructure like storage and packaging facilities. It was also observed that majority of consumers (48%) of the East Singhbhum district bought up to 1 kilogram of fish at a time and 38% of the consumers used to buy fish twice a week. Consumers were price sensitive and preferred fresh fish over frozen. The Fish Domestic Market Scheme, implemented by the Government of Jharkhand had proved beneficial for the retailers, but did not benefit the wholesalers of the district. The components like the stall, cutting equipments, kiyosk, auto rickshaw and e-rickshaw were distributed among the retailers. There was constant decrease in the annual budget allocated for the scheme by the state government.

Suggestions

1. The share of locally procured fish should be increased from 22.7% to 50% as this would encourage higher production and increase in the income of fish cultivators of the state.
2. Market infrastructure in Sakchi and Bistupur needs to be developed. Inclusion of cold storage facility would make the marketing system much more smooth and efficient.
3. A hygienic fish market should be constructed in Jamshedpur which can accommodate more wholesalers and retailers with better facilities.
4. Fish processing units should be set up as it will reduce the spoilage of fishes and can provide other fish products in the market.



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APPENDICES

APPENDICES

Questionnaire for Dealers

1. Name of Market:-
2. Name of Whole seller :-
3. Address :-
4. Age :-
5. Years in Profession:-
6. Contact No. :-
7. Which type of fish do you deal?
 - Local
 - Marketed from outside state
 - Both
8. Which type has higher price?
 - Local
 - Outside
9. Do customers prefer any particular fish marketed from outside place?
 - Yes
 - No

If yes, specify the fish:-

10. Fish distribution place:-
-
-

11. Average Fish Sales:-

Fish Species	Weekly Fish sales (Fresh)	Weekly fish sales (Frozen)
Catla		
Rohu		
Mrigal		
Common carp		
Grass Carp		
Telapia		
Shrimps		
Others		

12. Quantity of fish supplied from other states:-

Fish Species	Andhra Pradesh	West Bengal	Odisha
Catla			
Rohu			
Mrigal			
Common carp			
Grass Carp			
Telapia			
Shrimps			
Others			

13. Type of fish you sell:-

- Frozen
- Fresh
- Both

14. Which type of fish yields more profit:-

- Frozen
- Fresh

15. Why is fish healthier than others:-

- High in Protein
- Low cholesterol
- Presence of Omega3
- All

16. Do you have storage facility:-

- Yes
- No

If no, what you do with the surplus supply?

17. Other marketing facilities:-

- Sorting
- Packaging
- Shed

18. Do you have vehicle for fish transport?

- Yes
- No

If no, how do you transport fish?

Questionnaire for Dealers

1. Name:-
2. Address:-
3. Age Group:-
4. Type of Family:-
 - Nuclear
 - Joint
5. Education:-
6. Occupation:-
7. Place of purchase:-
 - Wholesaler
 - Retailer
 - Door to door vendor
 - Supermarket
8. Why do you buy from these places:-
 - Cheap
 - Fresh meat available
 - More accessible
 - others (specify)
9. Fish purchasing quantity (at once):-
 - 0-1 kg
 - 1-2 kg
 - 2-4 kg
 - > 4 kg
10. Frequency of purchase:-
 - Thrice a week
 - twice a week
 - Once a week
 - Daily
 - Not regular
11. Factors affecting the purchase:-
 - Price
 - Quality

- Accessibility
- Others (specify)

12. Preferred type of fish:-

- Cultivated
- freshly Caught
- Frozen
- Cheap

13. Consumer cost

Sl. No.	Customer's Cost	Highly Satisfied	Satisfied	Disappointed	Highly Disappointed
1	Consumer's wants and needs				
2	Convenience				
3	Money				
4	Communication				